A POSSIBLE PATHOGENIC RELATIONSHIP BETWEEN URINARY SCREENING IN 6–12 YEARS SCHOOL CHILDREN IN ‘MAKKAH & AL-BAHA REGIONS’ IN SAUDI ARABIA

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10.1136/archdischild-2019-epa.894

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Objective The aim of this study is to evaluate the prevalence of innocent heart murmurs in children affected by nocturnal enuresis (NE). Specifically, for this purpose, a possible pathogenic relationship linking both conditions.

Design This study is an observational study.

Setting The study was characterized by a careful examination of patient’s medical history and performing of physical examination, including the weight and height measurement. Mostly, it was a cardiological examination including monitoring patient’s blood pressure and abnormal heart sounds: patent’s foramen ovale, slight systolic impurity, mitral insufficiency, muffled heart sound, heart murmur, and impurity. The study was carried out in compliance with the Helsinki Declaration. Analyses were conducted using the Microsoft Excel 2011 (version 14.0.0) program. We used descriptive statistics to describe patients’ information (age, gender, familiarity). Data were expressed as the mean±standard deviation and percentage. The χ² test was used for categorical variables. The significance level was set at p < 0.05.

Patients We are enrolling about 400 children (G1), 300 males and 100 females aged between 5 and 15 years, affected from NE referred to the Service of Pediatrics, ‘Campus Bio-Medico’ University Hospital of Rome, from September 2013 to January 2019 in the study. The control group is composed of about 400 children without NE (G2).

Main outcome measures Prevalence of innocent heart murmurs in children with MNE or N-MNE.

There isn’t any study investigating the association of NE with innocent murmur in the literature.

Results The prevalence of heart innocent cardiac murmur appears to be significantly higher in children who suffer from NE. The results obtained are not definitive, because the study is ongoing.

Conclusions These findings made us acquaintance of the presence of possible underlying mechanisms which explain the association between higher prevalence of innocent heart murmur and enuresis, further studies are needed. A possible explanation of this relationship could be provided by heart increased secretion of atrial natriuretic peptide (ANP) and B-type natriuretic peptide (B-BNP). In particular, the murmur could be accentuated by hypervolemia, which in turn determines atrial and ventricular distention. This stimulates cardiomycocytes into producing ANP and B-BNP. ANP shares with B-BNP a high degree of structural homology and a profile of diuretic, natriuretic and vasodilator activities and inhibition of the renin-angiotensin-aldosterone system.

Introduction and aim of the work

Mass urinary screening is a useful tool to identify children with asymptomatic progressive renal diseases. Patients with renal disease have a variety of different clinical presentations, that are directly referred to the kidney or to extra renal clinical manifestation. Proteinuria as well as hematuria may be the only early signs of renal disease. UTI is very common in children with severe consequences on the kidney function leading to chronic kidney disease (CKD) and hypertension if left untreated. Hypercalciuria is the most common cause of urolithiasis in children.

The purpose of this study is to screen elementary school children in Makkah and Al-Baha region in Saudi Arabia, for prevalence of hematuria, proteinuria and hypercalciuria. The goal for screening of healthy individual or population for diseases is to reduce morbidity and mortality through early detection and treatment.

Subjects and methods This cross sectional study, approved by the Institutional Review Board Committees of Makkah and Al Baha, and was carried out between October 2016 and April 2017 on randomly selected 12352 children (including 9299 children from Makkah and 5053 children from Al Baha). Dipstick test was performed by a pediatrician. Children with abnormal urinary findings in the second screening were